

Message

From: g.d.beckett [g.d.beckett@aquiver.com]
Sent: 5/8/2018 10:03:05 PM
To: Whittier, Robert [Robert.Whittier@doh.hawaii.gov]; Donald Thomas [dthomas@soest.hawaii.edu]; TU, LYNDSEY [Tu.Lyndsey@epa.gov]; Linder, Steven [Linder.Steven@epa.gov]; Matt Tonkin [matt@sspa.com]; Grange, Gabrielle Fenix [Gabrielle.Grange@doh.hawaii.gov]; Ichinotsubo, Lene K [lene.ichinotsubo@doh.hawaii.gov]; Shalev, Omer [Shalev.Omer@epa.gov]
Subject: Re: Follow up items from today's 6 & 7 call

Thanks Bob,

Yes, the vadose zone aspects are not considered in this evaluation. The main purpose is just to get a sense for the transport and source setting in the g.w. system itself. Given the 7-day half-life the Navy has estimated (we'll use a broader range), that would suggest a limited dissolved-phase transport distance, in turn, suggesting some degree of LNAPL transport having already occurred relative to the tank farm in order to see impacts at Red Hill shaft.

The other evaluation not included here is the one we discussed a few internal meetings ago. Fenix had asked what it might take to do some dynamic LNAPL transport modeling. That is also not a large scope, but is not part of what Matt & I envisioned for what we provided this morning. That evaluation would follow along the same general logic, but would be many fewer runs because the modeling is much more complicated (2-d multiphase numerical simulator). That would require reconstructing the geologic model with the newer data the Navy has provided and getting some bracketing from you & Don on various dimensional aspects of these lava flows. This type of estimate would provide some reference for potential rates and distances of LANPL vadose transport as a function of those hydrogeologic properties, distributions, and release scenarios.

Don't know if this addresses your concern, but we can chat at your leisure to discuss further as you wish. Best regards.

On May 8, 2018 at 4:13 PM "Whittier, Robert" <Robert.Whittier@doh.hawaii.gov> wrote:

Hi Matt and GD,

It is great that some relevant analysis of the data is occurring. As I review the approach, one thought comes to mind. That is of vadose zone transport versus groundwater transport. The concept being that if the LNAPL or petroleum dissolved in the infiltrating rain water moved down the slope of the lava beds, the offset from the point of release to the intersection with the groundwater could result in apparent plume migration path that is different from migration on or in the groundwater.

The basic question is where to place the starting point for the contaminant plume when analyzing groundwater transport. The best I can come up with for Red Hill is: 1) look at natural tracers such as chloride and sulfate for an independent approach to evaluation groundwater flow direction; and 2) review the data from the other large UST investigations on Oahu (Kipapa Gulch and Waikakalaua Fuel Storage Facilities) to see if there is evidence of the lava bedding slope offsetting the contaminant plume. I am currently looking to #1, and if I have time will review the reports for Kipapa and Waikakalaua.

Thanks,
Bob W.

From: Matt Tonkin <matt@sspa.com>
Sent: Tuesday, May 8, 2018 7:49:03 AM
To: TU, LYNDSEY; Grange, Gabrielle Fenix; Ichinotsubo, Lene K; Shalev, Omer; Whittier, Robert; G D Beckett; Donald Thomas; Linder, Steven
Subject: RE: Follow up items from today's 6 & 7 call

Lyndsey:

Thanks for the summary, I think this captured the main items well.


Gary and I have worked up a short description of some calculations that were described on the call, to get an independent sense of transport in the subsurface. I am attaching it here for your consideration. Again, the goal would be to start getting our own sense of migration rates and also of attenuation, so that we can more explicitly critique and respond to Navy presentations, with some actually quantitative calculations as back-up. It would be invaluable to discuss the parameter ranges that should be considered in any calculations together with Bob and Don, particularly given that Bob already provided a nice example of the non-uniqueness and sensitivity of the relation between gradients and flow rates, migration.

Gary and I would greatly appreciate any thoughts you have on the attached.

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From: TU, LYNDSEY [mailto:Tu.Lyndsey@epa.gov]

Sent: Friday, May 4, 2018 7:24 PM

To: Grange, Gabrielle Fenix <Gabrielle.Grange@doh.hawaii.gov>; Ichinotsubo, Lene K

<lene.ichinotsubo@doh.hawaii.gov>; Shalev, Omer <Shalev.Omer@epa.gov>; Whittier, Robert <Robert.Whittier@doh.hawaii.gov>; G D Beckett <g.d.beckett@aquiver.com>; Matt Tonkin <matt@sspa.com>; Donald Thomas <dthomas@soest.hawaii.edu>; Linder, Steven <Linder.Steven@epa.gov>

Subject: Follow up items from today's 6 & 7 call

Hi All,

Thanks for being on the call today, I wanted to follow up with a snippet from the key issues we covered and action items we agreed to while they're still fresh in my mind.

Key Issues Discussed:

- Disagreement with base model and it's assumptions about gradient. *We have copious comments on this from previous meetings, working on translating this into an action item to independently examine the data.*
- Issues with the assumptions from the release scenario / NSZD projections the Navy made. *See comment above.*
- Possible Tracer Study. *Decided to postpone discussion until more work is completed.*
- Database management and unified data management strategy. *We all acknowledge this is important, we need to decide who, how and where this happens.*
- RHMW11 CWRM Request to HDOH. *We believe the Navy has the data necessary to address the major BWS questions, they just need to re-examine.*
- Letter regarding October 2017 TPH-D results. *EPA and Lene discussed this after the call.*

Action Items:

- Matt and Gary will put together a short description of level of effort for pulling together some independent analysis for top two bullets above by COB Tuesday.
- EPA / DOH will have a separate discussion about data management, time TBD.
- Lyndsey will follow up with Navy about status of petrographic analysis
- Lene and Steve Linder will encourage Navy to quickly respond to BWS comments on RHMW11 on Monday PC call. Will see what additional follow up is needed, but this is the first action that needs to take place.
- DOH is drafting the response to TPH letter, EPA offers any assistance that may be needed.

This is just a list from my notes, so please add on if something was missed. Much of the technical detail supporting these actions was captured in the pre-meeting notes and comments pulled together by others. Thanks for making the time for our call today and for preparing your thoughts in advance so we could get to these actions so quickly.

Hope you have a nice weekend,

Lyndsey Tu

Underground Storage Tanks Program

Land Division, U.S. EPA Pacific Southwest

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